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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/657,096 | 09/09/2003 | Bamdad Bahar | 0769-4624US5 | 9845 |
| 7590 11/03/2005 MORGAN & FINNEGAN, L.L.P. 345 Park Avenue New York, NY 10154 | | | EXAMINER MARTIN, ANGELA J | |
| | | | ART UNIT 1745 | PAPER NUMBER |

DATE MAILED: 11/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/657,096

Applicant(s)

BAHAR ET AL.

Examiner

Angela J. Martin

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 August 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 and 17-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 18-21 is/are rejected.
- 7) ☒ Claim(s) 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>7/28/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED DESCRIPTION

This Office Action is responsive to the Amendment filed on August 19, 2005. The Applicant has amended claims 1, 10, 18, 19, 21-23 and has canceled claim 16. However, a new rejection is presented for the following reasons of record.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 12, 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Kato et al., WO 91/14021 (abstract).

Rejection of claims 1, 2, 12, 20 drawn to a polymeric membrane.

Kato et al., teach a polymeric membrane comprising a polymeric sheet comprising polymer and having a porous structure, the sheet having distributed in the polymer: inorganic particulate, metal, organic polymer, or a combination, and the porous structure is at least partially filled with an ion-exchange resin to provide ionic conductance (abstract). It teaches a finely divided powder (abstract). It teaches the sheet has metal distributed therein (abstract).

Thus, the claims are anticipated.

Claim Rejections - 35 USC § 102/103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 1745

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 10, 14, 15, 18, 19 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ohashi et al., EP 0503147 A1.

Ohashi et al., teach a polymeric membrane having a porous structure, the sheet having distributed in the polymer a metal (p. 2, lines 37-41). It teaches the polymeric sheet is porous expanded PTFE (p. 2, lines 57-58; p. 3, lines 2-3). It teaches a composite membrane comprising a polymeric sheet having a thickness of less than 50 microns (p. 3, lines 2-4).

Thus, the claims are anticipated.

However, if the claims are not anticipated, they are obvious because although it does not teach a porous structure at least partially filled with an ion-exchange resin to provide ionic conductance, the fluorinated resin would inherently provide ionic conductance and it is well known in the art to use the membrane between fuel cell electrodes.

5. Claims 3, 6-9, 11, 13, 21 rejected under 35 U.S.C. 103(a) as being unpatentable over Laconti et al., GB 2009788 A.

Laconti et al., teach the polymeric sheet has a precious metal (p. 3, lines 24-27). It teaches platinum in the sheet (p. 3, lines 24-27). It teaches the sheet has titania (p. 4, lines 61-63). It teaches the sheet has carbon (p. 4, lines 6-13). It teaches a metal salt (p. 4, lines

Thus, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because although the prior art of record does not teach metal salts, it does teach metals which can include metal salts.

Allowable Subject Matter

6. Claim 17 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter:

Applicant claims the membrane of claim 15, wherein the polymeric sheet has a thickness of 38 microns, and wherein the membrane disposed between the two electrodes of a fuel cell provides a steady state current of at least 1.78 amps/cm² at 0.5 volts, with no humidification of incoming fuel cell air and hydrogen reactants, with air and hydrogen feed both at 40 psig and 25 degrees C, and the fuel cell temperature at 50 degrees C.

The prior art of record does not disclose the above claim limitations.

Response to Arguments

8. Applicant's arguments with respect to the pending claims have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela J. Martin whose telephone number is 571-272-1288. The examiner can normally be reached on Monday-Friday from 9:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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